Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Tailoring the selectivity in 2-butene conversion over supported d^0 group 4, 5 and 6 metal hydrides: from dimerization to metathesis

Kai C. Szeto, Nicolas Merle, Cesar Rios, Pascal Rouge, Jessica Llop Castelbo, Mostafa Taoufik**

Université Lyon 1, ICL, CPE Lyon, CNRS, UMR 5265 C2P2, LCOMS, 43 Bd du 11 Novembre 1918 F-69616, Villeurbanne Cedex France.
e-mail Kai-Chung.SZETO@univ-lyon1.fr; mostafa.taoufik@univ-lyon1.fr

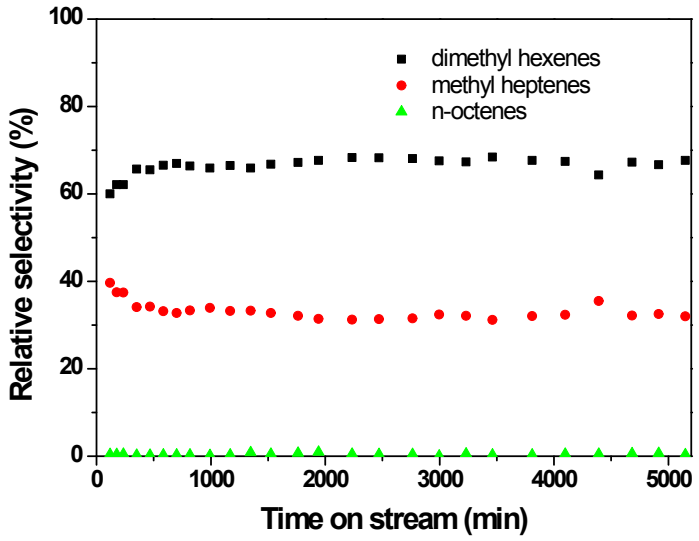

Figure S1. Relative selectivity of octenes with time on stream obtained during trans-2-butene dimerization over Zr-H/ SiO_2-$Al_2O_{3\text{-}500°C}$ at 180 °C and 20 bar.

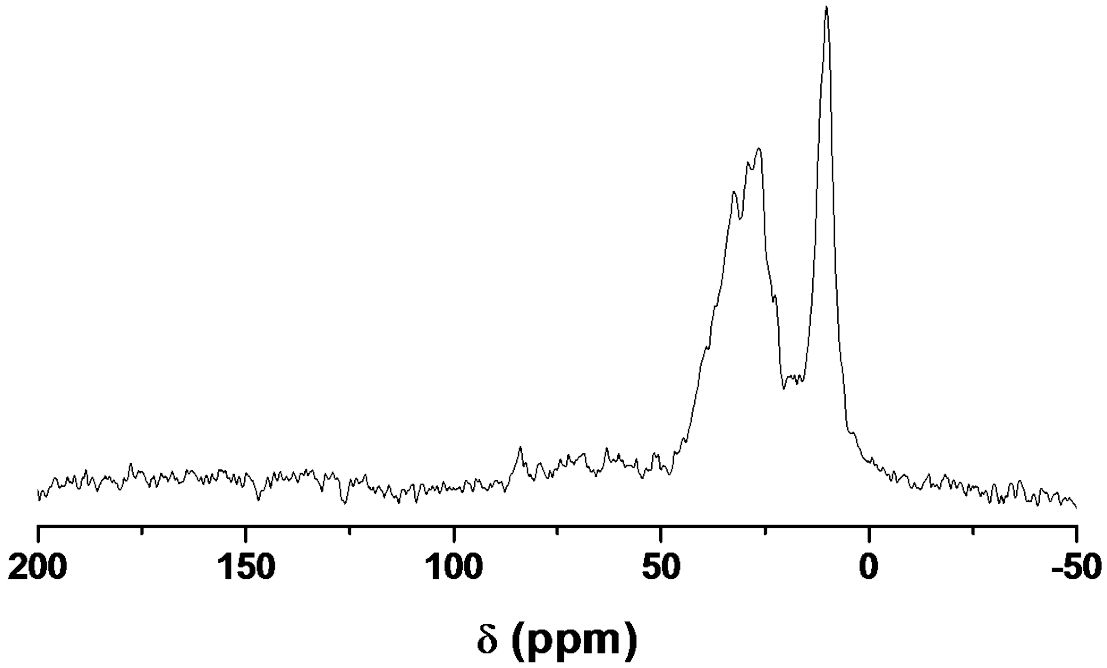

Figure S2. ^{13}C CPMAS NMR spectrum of **1** after reaction with gas phase trans-2-butene at 180 °C.

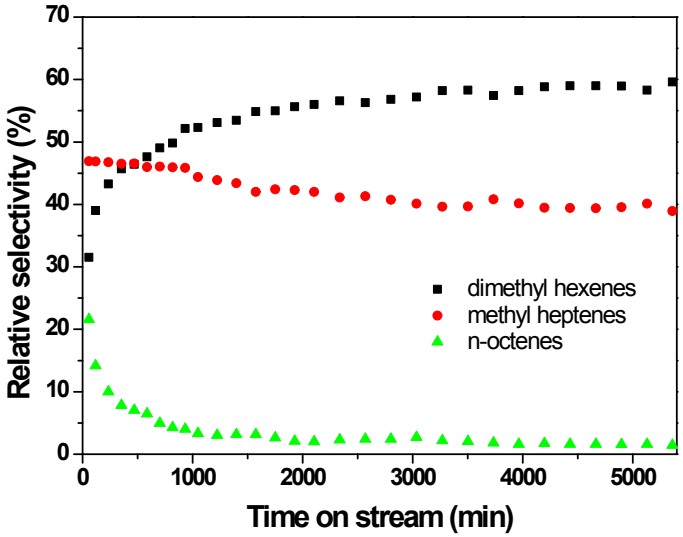

Figure S3. Relative selectivity of octenes with time on stream obtained during trans-2-butene conversion over Ta-H/ SiO_2-$Al_2O_{3\text{-}500°C}$ at 180 °C and 20 bar.

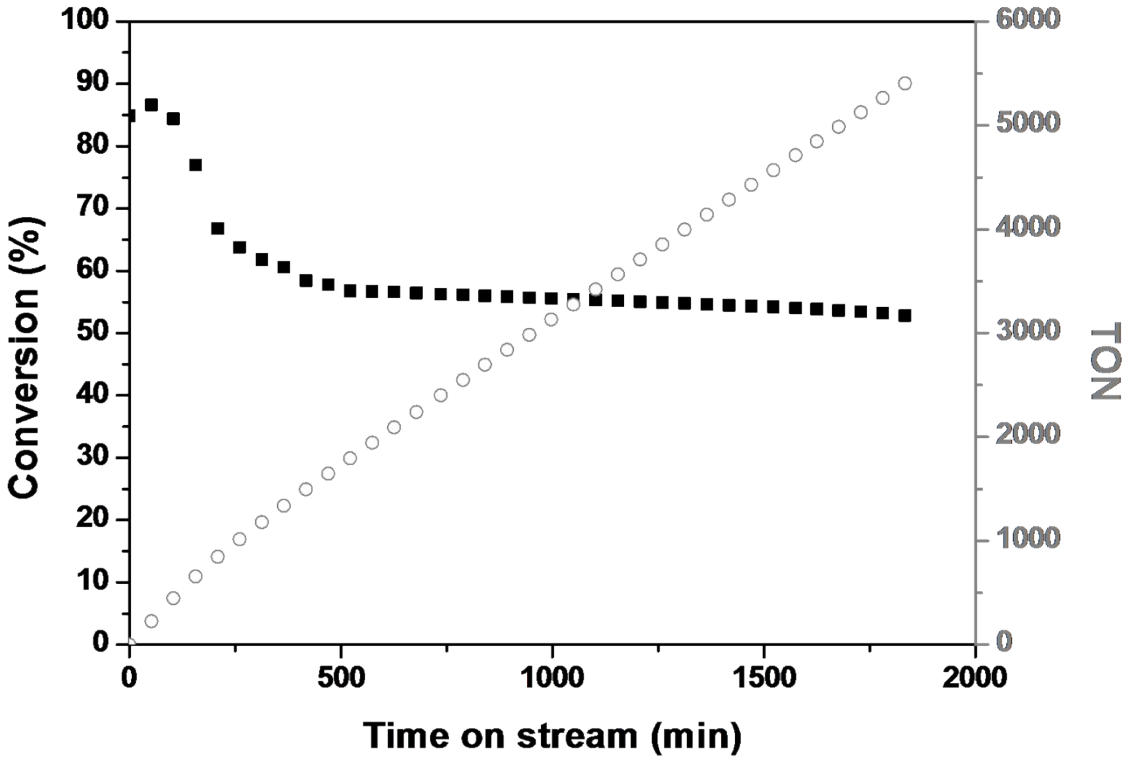

Figure S4. Conversion of 2-butenes and cumulated TON vs. time on stream over WH_3/SiO_2-$Al_2O_{3\text{-}(500)}$.

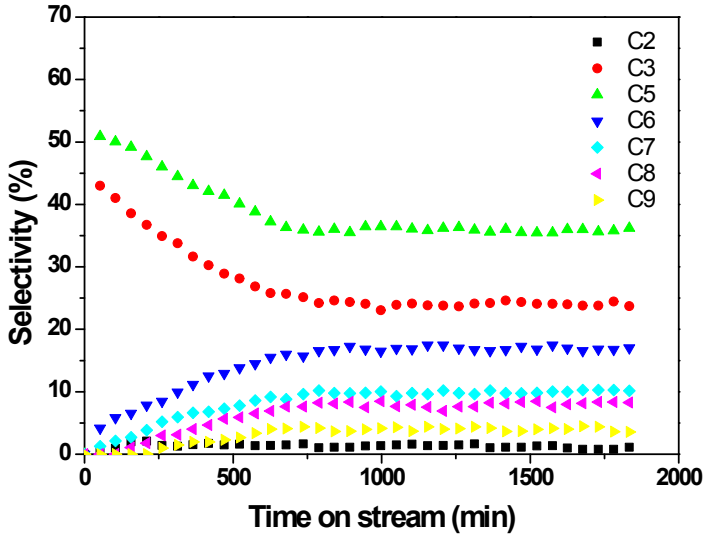

Figure S5. Selectivity vs. time on stream obtained during the 2-butenes conversion catalyzed by WH_3/SiO_2-$Al_2O_{3\text{-}(500)}$.